ASSIGNMENT 6

Textbook Assignment: "Clinical Laboratory," chapter 7, pages 7-1 to 7-36.

6-1. Which of the following, if any, is considered the most appropriate source for blood specimens obtained for clinical examination?

1. By venipuncture
2. By finger puncture
3. From an artery
4. None of the above

6-2. Using the steps below, determine the correct sequence for obtaining blood by finger puncture.

a. Clean finger
b. Lance finger
c. Milk finger
d. Collect specimen
e. Wipe away first drop

1. a, b, c, e, d
2. c, b, e, a, d
3. a, c, b, e, d
4. c, a, b, e, d

6-3. When performing a finger puncture, the first drop should be wiped away to avoid which of the following conditions?

1. Bacterial contamination
2. Clotting at the puncture site
3. Dilution of the specimen with alcohol
4. Dilution of the specimen with tissue fluids

6-4. How would a 5 ml blood specimen be obtained from a patient with an intravenous antibiotic being given through the left arm and blood being received through the right arm?

1. Multiple finger punctures
2. Left arm
3. Right arm
4. Hand or foot

6-5. A tourniquet applied to the arm during venipuncture should provide enough tension to compress the artery, but not the vein.

1. True
2. False

6-6. The correct needle position for venipuncture is (a) what degree angle and (b) with the bevel in what position?

1. (a) 15, (b) up
2. (a) 30, (b) up
3. (a) 15, (b) down
4. (a) 30, (b) down

6-7. A tourniquet is normally applied before and to aid in the process of venipuncture. At what point in the venipuncture procedure should you remove the tourniquet?

1. Just before needle insertion
2. Just after needle insertion, but before vacutainer
3. Once all specimens have been collected
4. After needle removal

6-8. The part of the microscope on which the prepared specimen is placed for examination is called the

1. arm
2. base
3. frame
4. stage

6-9. All of the following are components of the microscope's illumination system EXCEPT

1. internal light source
2. condenser
3. external light source
4. iris diaphragm

6-10. The total magnification available by using the lens color coded red is

1. 1000X
2. 450X
3. 100X
4. 10X

6-11. Light travels from the objective to the ocular lens through what component of the microscope?

1. Body tube
2. Iris diaphragm
3. High-powered lens
4. Revolving nosepiece

6-12. What objective should be used for a detailed study of stained bacterial smears?

1. Low power
2. High dry
3. Oil immersion
4. Either 2 or 3 above

6-13. If necessary, which, if any, of the following substances may be used for cleaning the lenses on a microscope?

1. Alcohol
2. Bleach
3. Xylene
4. None of the above

6-14. A CBC includes which of the following?

1. Total RBC count
2. Hematocrit
3. Differential WBC count
4. All of the above

6-15. The hemacytometer is designed primarily for what purpose?

1. To differentiate between red blood cells and white blood cells
2. To count white blood cells
3. To count red blood cells
4. Both 2 and 3

6-16. The main reason for using the cover glass included with the hemacytometer instead of an ordinary cover glass is because the hemacytometer cover glass

1. is clearer
2. has an even surface
3. is thicker
4. is less likely to break

6-17. A subnormal RBC count may indicate that the patient has which of the following listed conditions?

1. Leukopenia
2. Anemia
3. Dehydration
4. Uremia

6-18. What is the total capacity of the capillary pipette provided in a Unopette® for RBC count?

1. 0.5µl
2. 1.0µl
3. 10.0µl
4. 100.0µl

6-19. Which of the following conditions indicates that the counting chamber is properly loaded?

1. There is a thin, even film of fluid under the coverglass
2. The fluid flows into the grooves at the edges of the chamber
3. Air bubbles are seen in the field
4. The chamber is flooded

6-20. What objective should be used for counting RBCs?

1. Low power
2. High power
3. Oil immersion
4. High dry

6-21. When counting cells, to arrive at a correct count, the cells touching the lines on the_____ and _____are counted in addition to all cells totally within each square.

1. Left, top
2. Left, bottom
3. Right, top
4. Right, bottom

6-22. To arrive at the number of RBCs per mm^3, total the number of cells counted in the five fields and multiply by

1. 0.1
2. 10.0
3. 100.0
4. 10,000.0

6-23. Which of the following factors affect hemoglobin values?

1. Age
2. Sex
3. Altitude
4. All the above

6-24. Both the number of squares and the counting procedure for WBCs is the same as it is for RBCs.

1. True
2. False

6-25. What is the term used for the volume of erythrocytes expressed as a percentage of the volume of whole blood in a sample?

1. Hematocrit
2. Hemoglobin
3. Red blood count
4. Complete blood cell count

6-26. The hematocrit for a normal, healthy female is within what range?

1. 30 to 40 percent
2. 37 to 47 percent
3. 42 to 50 percent
4. 44 to 52 percent

6-27. A shift from leukocytosis toward leukopenia in a patient with a systemic bacterial infection is a good sign.

1. True
2. False

6-28. Select from those listed below the term used to describe an abnormally high WBC count.

1. Leukocytosis
2. Erythrocytosis
3. Leukopenia
4. Pancytopenia

6-29. Which of the following conditions may cause leukopenia?

1. Strep throat
2. Psittacosis
3. Anaphylactic shock
4. Each of the above

6-30. To arrive at the number of white cells per mm^3 of blood, total the number of cells counted in the four fields and multiply by

1. 0.5
2. 5.0
3. 50.0
4. 5000.0

6-31. A differential blood count is the percentage of distribution in the blood of which of the following types of cells?

1. Lymphocytes
2. Monocytes
3. Leukocytes
4. Erythrocytes

6-32. What is the function of leukocytes?

1. To carry oxygen through the blood
2. To control various disease conditions
3. To aid in clotting the blood
4. Each of the above

6-33. What type of leukocyte comprises the largest percentage of cells in the circulating blood?

1. Lymphocyte
2. Neutrophil
3. Erythocyte
4. Thrombocyte

6-34. When viewing a smear for a differential count, you identify the cells with the large, scattered dark blue granules that are darker than their nuclei as

1. lymphocytes
2. monocytes
3. basophils
4. neutrophils

6-35. The largest of the normal WBCs is the

1. monocyte
2. lymphocyte
3. eosinophil
4. basophil

6-36. On a properly prepared slide for a differential count, the smear will

1. extend from one side of the slide to the other
2. be evenly distributed on the entire slide
3. show no wavy or blank spots
4. show smooth even edges

6-37. Properly prepared differential slides require a longer rinse time than stain time.

1. True
2. False

6-38. If a smear used in a differential count is to be saved for reexamination, remove the immersion oil by placing a piece of lens tissue over the slide and moistening the tissue with

1. alcohol
2. water
3. xylene
4. acetone

6-39. A continued shift to the left with a falling total WBC count probably indicates

1. progress toward normal recovery
2. a decrease in immature neutrophils
3. a breakdown of the body's defense mechanism and is a poor prognosis
4. a decrease in parasitic and allergenic conditions

A. Recovery
B. Parasitic infection
C. Breakdown of the body's defense
D. Active tuberculosis

TO ANSWER QUESTIONS 6-40 THROUGH 6-43, SELECT FROM THE ABOVE LIST THE CONDITION THAT MOST APPROPRIATELY CORRESPONDS TO THE LEUKOCYTIC CHARACTERISTIC IN THE QUESTION.

6-40. Increased eosinophils.

1. A
2. B
3. C
4. D

6-41. Increased monocytes.

1. A
2. B
3. C
4. D

6-42. Decreased WBC count with increased juvenile cells.

1. A
2. B
3. C
4. D

6-43. Decreased WBC count with increased mature cells.

1. A
2. B
3. C
4. D

6-44. All of the following are classifications of bacteria EXCEPT

1. Temperature and moisture content
2. Growth requirements and morphologic characteristics
3. Toxins produced and disease-producing ability
4. Gram's stain reaction and colonial morphology

6-45. The difference between anaerobes and aerobes is that anaerobes need oxygen to reproduce.

1. True
2. False

6-46. Autotrophic bacteria require an environment that supplies them with nourishment.

1. True
2. False

6-47. Which of the following structures provides some bacteria with a means of movement?

1. Capsule
2. Spore
3. Spirillum
4. Flagellum

6-48. What type of bacterial toxin completely lyses erythrocytes?

1. Exotoxin
2. Endotoxin
3. Beta hemolysin
4. Alpha hemolysin

A. Impetigo
B. Plague
C. Pneumonia
D. Gas gangrene
E. Strep throat
F. Whooping cough

TO ANSWER ITEMS 6-49 THROUGH 6-53, SELECT FROM THE ABOVE LIST THE CONDITION MOST PROBABLY CAUSED BY THE AGENT LISTED IN THE QUESTION.

6-49. Bordetella pertussis.

1. A
2. C
3. E
4. F

6-50. Streptococcus pneumoniae.

1. A
2. B
3. C
4. E

6-51. Yersinia pestis.

1. B
2. C
3. D
4. E

6-52. Clostridium perfringens.

1. A
2. C
3. D
4. F

6-53. Staphylococcus aureus.

1. A
2. D
3. E
4. F

6-54. In the Gram's stain procedure, which of the following chemicals acts as the mordant?

1. Crystal violet
2. Safranin
3. Iodine
4. Acetone

6-55. All of the following statements are true about antigens EXCEPT that an antigen

1. is inherently unstable structurally
2. must be foreign to the body
3. possesses a high molecular weight
4. has a high specificity to stimulate tissues to produce antibodies

6-56. The Rapid Plasma Reagin test for syphilis is best used with what type of specimen?

1. Serum
2. Plasma
3. Whole blood
4. Either serum or plasma

6-57. To properly perform the RPR Card Test, the serum sample should be from arterial blood that has been separated from the blood cells as soon after collection as possible.

1. True
2. False

6-58. Which of the following actions is considered appropriate if a patient's RPR is reactive?

1. Give patient penicillin
2. Send patient to lab for further testing
3. Counsel patient against engaging in unsafe sex
4. Report results of RPR to patient's commanding officer

6-59. Which of the following chemical preparations is frequently used to detect fungi?

1. Hydrogen sulfoxide
2. Hydrogen peroxide
3. Potassium hydroxide
4. Potassium sulfate

6-60. The best urine specimen is that taken during which of the following times?

1. First morning
2. Random
3. Fasting
4. 24 hour

6-61. For a 24-hour urine specimen collection, which of the following statements is INCORRECT?

1. Discard the first specimen
2. Add a preservative after the first specimen has been obtained
3. Discard the last specimen
4. Refrigerate the specimen during the collection period

6-62. What purpose does toluene serve when used in conjunction with a urine specimen?

1. It increases the albumin
2. It dissolves unwanted cells
3. It protects the specimen from decomposition
4. It dissolves the albumin

6-63. Which of the following colors would be considered abnormal in a urine specimen?

1. Colorless
2. Amber
3. Straw
4. Red

A. Pyridium®
B. Bile
C. Blood
D. Fats (chyle)

TO ANSWER ITEMS 6-64 THROUGH 6-67, SELECT FROM THE ABOVE LIST THE MOST PROBABLE CAUSATIVE AGENT THAT WOULD PRODUCE THE URINE COLOR STATED IN THE QUESTION.

6-64. Milky.

1. A
2. B
3. C
4. D

6-65. Dark orange.

1. A
2. B
3. C
4. D

6-66. Red-brown.

1. A
2. B
3. C
4. D

6-67. Brown.

1. A
2. B
3. C
4. D

6-68. A report on urine transparency is valid regardless of standing time.

1. True
2. False

6-69. The specific gravity of a liquid or solid is the weight of the substance as compared to an equal volume of

1. ethanol
2. methanol
3. distilled water
4. normal saline

6-70. In the microscopic examination of urine sediment, scan the slide using the low per objective and examine it in detail using which of the following objectives?

1. Low power
2. High dry
3. High power
4. Oil immersion

6-71. The addition of one drop of 5 percent acetic acid to urine sediment will disintegrate

1. white blood cells
2. mucous threads
3. casts
4. red blood cells

6-72. There are seven types of casts or sediments found in urine. Of the four listed below, which may be attributed to lupus?

1. Red cell casts
2. Fatty casts
3. Granular casts
4. Epithelial casts